

REMARKS

This is a full and complete response to the Office action dated September 27, 2007 and the advisory action of December 12, 2007.

All comments and remarks of record are herein incorporated by reference. Applicants respectfully traverse these rejections and all comments made in the Office Action. Nevertheless, in an effort to expedite prosecution, Applicants provide the following remarks regarding the cited references.

DISPOSITION OF CLAIMS

Claims 11-14, and 17-30 are pending in the application. Claims 11 and 24 have been amended with support found in paragraph [0045], and new claims 29 and 30 have been added. No new matter has been added.

REJECTION UNDER 103

Claims 11-14 and 17-27 stand rejected under 35 USC §103(a) as being unpatentable over **Victor et al.**, US 6,127,094 (hereinafter “**Victor**”). Applicants respectfully traverse this rejection.

The Examiner has taken the position that although **Victor** teaches a thermoplastics block copolymer as optional, **Victor** still teaches using a thermoplastic block copolymer in the composition.

Although the Applicants respectfully disagree with the Examiner, in order for advancement of the present application, Applicants have amended claims 11 and 24 to recite “consisting essentially of.” As noted in MPEP §2111.03, this transitional phrase “limits the scope of a claim to the specified materials or steps ‘and those that do not materially affect the basic and novel characteristics of the claimed invention.’” Therefore, as the composition of **Victor** requires additional components such as

elastomer forming monomer (methacrylates), α,β -ethylenically saturated carboxylic acids and polyfunctional vinyl monomers, **Victor** does not disclose or suggest the claimed invention.

Victor is directed to water developable photosensitive printing plates and compositions useful in preparation thereof. *See Victor*, col.1, lines 6-9. **Victor** sought to produce printing plates which would have good properties, yet allow for water processing, where material could be carried away by an aqueous media. *See Victor*, col. 3, lines 8-39. For example, a photosensitive printing plate could be exposed to electromagnetic radiation to promote polymerization of the printing plate in the form of a desired image, and then afterward, allow for the non-exposed portions to be removed by an aqueous media. *See Victor*, col. 12, lines 49-61. The portions exposed to the radiation would not be removed as they would have been hardened by the radiation exposure, thereby leaving the desired image on the printing plate.

The composition disclosed by **Victor** is comprised of (col.3, line 43 to col. 4, line 13):

(A) in the range of about 25 up to about 80 wt% of at least one copolymer consisting essentially of in the range of:

(i) about 25 up to about 95 mol % of at least one elastomer forming monomer,

(ii) about 0.5 up to about 30 mol % of at least one α,β -ethylenically saturated carboxylic acid, and

(iii) about 0.1 up to about 50 mol % of at least one polyfunctional vinyl monomer;

(B) 0.2 to 2 mol of a washout aid;

(C) 5-70 wt% of at least one ethyleneically unsaturated monomer;

(D) 0.01 to 20 wt% of at least one photopolymerization initiator

(E) 0-50 wt% of at least one polymer selected from

(i) a linear thermoplastic having the general formula (A-B-A), (A-B) or (A-B)

(ii) a linear polymer;

- (F) 0 to 20 wt% of at least one plasticizer;
- (G) 0 to 20 wt% of at least one emulsifier.

As noted above in part (A)(i), the composition of **Victor** must contain about 25 to 80 wt% of at least one “elastomer forming monomer.” As indicated in Col. 4, lines 36-44 such elastomer forming monomers are “acrylates, methacrylates and the like.”

Additionally, in part (A)(ii), the composition of **Victor** must include from about 0.5 to 30 mol % α,β -ethylenically saturated carboxylic acid. These are defined by **Victor** as “methacrylic acid, acrylic acid, itaconic acid, maleic acid, β -carboxyethyl acrylate (β -CEA), β -carboxyethyle methacrylate, and the like.” *Victor, Col. 4, lines 45-50.*

Furthermore, as noted above in part (A)(iii), the composition of **Victor** must include “polyfunctional vinyl monomers” which are defined as “ethyleneglycol ethyleneglycol di(meth)acrylate (i.e., ethyleneglycol diacrylate or ethyleneglycol dimethacrylate), divinyl benzene, 1,6-hexanediol di(meth)acrylate, 1,4-butanediol di(meth)acrylate, trimethylopropane tri(meth)acrylate, erythritol tetra(meth)acrylate, and the like.” *Victor, Col. 4, lines 50-59.*

Therefore components (A)(i) through (A)(iii) are required by the **Victor**, and furthermore linear thermoplastic elastomers (component (E)) are only optional. As the present claims “consist essentially of” components (a) through (d), Applicants respectfully assert the composition of **Victor** does not disclose or suggest the present claims. Accordingly, Applicants respectfully request the above mentioned rejection be withdrawn.

REJECTION UNDER 35 USC §103(a)

Claims 11-14, 20-24 and 28 stand rejected under 35 USC §103(a) as being unpatentable over **Chen et al.** US 4,369,246 (hereinafter “**Chen**”) as evidenced by **Holden et al.** (hereinafter “**Holden**”), US 3,265,765. Applicants respectfully traverse this rejection.

The Examiner argues that **Chen** teaches the A-B-A formula for block copolymers, where the B block may comprise aliphatic conjugated diolefins. The Examiner further asserts that **Chen** also refers to **Holden** for specific diolefins. The Examiner then relies on **Holden** for showing elastomeric midblocks. Specifically, the Examiner relies on Col. 4, lines 32-36 which the Examiner believes teaches that isoprene and butadiene may be together in the midblock.

Applicants respectfully assert the Examiner is merely engaged in impermissible hindsight reconstruction using the Applicant’s application as a road map. *MPEP §2145(X)*. Applicants respectfully assert that the neither **Chen** nor **Holden** disclose a substantially random copolymer block (I/B) of predominantly isoprene and butadiene in a mutual weight ratio in the range of from 20/80 to 80/20 as recited in the present claims.

The section of **Chen** referred to by the Examiner in the advisory action is as follows (col. 4, lines 29-36):

Preferably, the elastomeric mid-section blocks, B, are polymers of aliphatic conjugated diolefins while the nonelastomeric blocks, A, are those formed by polymerizing alkenyl aromatic hydrocarbons, preferably vinyl substituted aromatic hydrocarbons, and still more preferably vinyl monocyclic aromatic hydrocarbons. The block copolymers are disclosed in Holden et al. U.S. Pat. No. 3,265,765

Therefore as indicated above, **Chen** discloses that for a block copolymer, B blocks can be elastomeric blocks of diolefins, and A blocks can be made up of alkenyl aromatic hydrocarbons. **Chen** then incorporates **Holden** for the types of the block copolymers referred to therein.

Holden never discloses or suggests a mixed isoprene/butadiene mid-block. The portion cited by the Examiner which is asserted as showing isoprene and butadiene may be mixed in fact shows the opposite. **Holden** in col. 4, lines 32-35, states the following:

The elastomeric mid section can be a polymer block of essentially any synthetic elastomer preferably of an aliphatic conjugated diene, such as isoprene, methyl isoprene, butadiene, copolymers of the styrene-butadiene type, and butadiene-acrylonitrile.

As can be seen the reference to which polymer can be used in the midblock is SINGULAR, not plural. As can be seen, it is stated the midblock can be any synthetic elastomer preferably of an aliphatic conjugated diene. The underlined words are employed in the singular and not the plural. Furthermore, in the portion above, where polymers are mixed it is only styrene-butadiene and butadiene-acrylonitrile. It should be noted also, these mentioned copolymers are mixtures of elastomeric and non-elastomeric monomers. No where is it mentioned that butadiene and isoprene are mixed in the midblock. In fact, because the usage is singular, and it mentions the types of monomers that should be mixed, it in fact teaches away from what is asserted in the advisory action and office action.

Additionally, the Examiner refers to **Holden**, Col. 4, lines 15-20 and asserts that this portion teach mixtures of more than one elastomeric material. Applicants respectfully disagree. The cited portion is as follows:

While the same monomers may be employed in either terminal or middle blocks in conjunction with different copolymerized monomers, the elastomeric or non-elastomeric character of the block will in most cases be determined by the ratio of the several monomers employed.

This is referring to what makes a particular block have an elastomeric or non-elastomeric character and does not disclose or suggest admixing butadiene and isoprene. As discussed in the example immediately after the above section, lines 20-31, **Holden** notes how the proportion of ethylene and propylene can affect the characteristic of a particular block in a block copolymer. It is stated that to the extent ethylene is incorporated into the block, it will have more non-elastomeric properties. This therefore

is referring to a discussion of what can make a particular block have elastomeric properties or non-elastomeric properties.

This discussion is also in the context of the types of block copolymers which is the subject of the **Holden** patent. **Holden** discloses two specific types of block copolymers, (1) “pure” and (2) “tapered” as follow:

- (1) “Pure” block copolymers are prepared by adding a non-elastic block A until all the monomer is consumed, and then adding the elastomeric block B until all such B monomers are polymerized, and then injecting A monomers to form a second terminal block. *See Holden*, col. 3, lines 13-20. Thus, each A block and B block is only composed of one type of monomer.
- (2) “tapered” block copolymers are prepared by adding a non-elastic block A until all the monomer is consumed. *See Holden*, col. 3, lines 21-49. After being formed, the mixture will contain or has added to it further non-elastomeric monomers. At that time, elastomeric monomers are added. Because the elastomeric monomers polymerize at a greater rate, what occurs is that the block forming immediately adjacent to the original non-elastomeric block is rich in elastomeric monomer units, but gradually “tapers” becoming increasingly rich in non-elastomeric monomers. *See Holden*, col. 3, lines 21-49. A terminal non-elastomeric block is then polymerized.

Thus, **Holden** does not disclose admixing butadiene and isoprene, but instead is instead directed to “pure” block copolymers and those where mid-block is “tapered.” **Holden** discloses only that elastomeric midblocks may additionally have non-elastomeric blocks polymerized therein. For example, in the portion cited by the examiner in Col. 4, lines 32-36, the midblocks mentioned to be copolymers are a mixture of an elastomeric monomers and non-elastomeric monomers, namely styrene-butadiene and butadiene-acrylonitrile. No where is it disclosed or suggested that the midblock be a mixture of

isoprene and butadiene. Therefore, no *prima facie* case of obviousness can be established, and Applicants respectfully request the above rejection be withdrawn.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner is invited to directly contact the undersigned by phone to further the discussion.

The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437, referencing Attorney Docket No. 8132.003.PCUS00.

Conclusion

Having addressed all issues set out in the Office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,
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